5   other multimedia object start and stop times, and three durations, a minimum duration, a

6   maximum duration and a preferred duration for each multimedia object prior to starting playback

7   of the multimedia object; and

8   resolving the durations of multimedia objects using said information based on actual

9   multimedia object durations and arrival of information of multimedia objects to be played,

10   wherein the step of resolving comprises the steps of:

11   collecting all the dependency relations for a label Px, by taking all objects n that have Px

12   as the label for their end time:

13       $t_n + \text{minimum}(n) \leq t_x \leq t_n + \text{maximum}(n) \quad n = 1, \ldots, N$

14   where t_n is the start time of object n, and N is the number of objects;

15   using the N relations to calculate the tightest bounds on t_x:

16       $\min\{t_x\} \leq \{t_x\} \leq \max\{t_x\}$

17   with

18       $\min\{t_x\} = \max\{t_x + \text{minimum}(n)\} \quad n = 1, \ldots, N$

19       $\max\{t_x\} = \min\{t_x + \text{maximum}(n)\} \quad n = 1, \ldots, N;$

20   recalculating bounds on the durations of each object n, by using:

21       $\text{duration}(n) = t_x - t_n$

22   to get

23       $\min\{t_x\} - t_n \leq \text{duration}(n) \leq \max\{t_n\} - t_n \quad n = 1, \ldots, N;$ and

24   recalculating the preferred duration of each object n according to the process:

25   if $(\text{preferred}(n) < \min\{t_x\} - t_n)$ then

26       $\text{preferred}(n) = \min\{t_x\} - t_n$

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